

Col. St. John writes to me as follows respecting this animal :—
 “The Markhore was caught in the hills at the upper end of the Bolan Pass. The popular story there is that the Pass itself divides the two species of *Capra*—*C. megaceros* never being found to the west, nor *C. tragulus* to the east of the Pass. The insignificant dimensions of the Pass make the truth of this story impossible; and shikaris have assured me that both species are found on the Chilten Mountains, N.W. of the head of the Pass. But the Bolan is *about* the line where the two meet; and I am inclined to doubt whether *C. megaceros* is ever found in the Helmund valley proper.”

Amongst the deaths in February I regret to have to record that of the Great Ant-eater (*Myrmecophaga jubata*), presented by Dr. John A. Palin, C.M.Z.S., October 4, 1867. It is, however, I suppose, unprecedented that an animal of this delicate nature should live so long as 14 years in captivity.

The following papers were read :—

1. List of the Lepidoptera collected by the Rev. J. H. Hocking, chiefly in the Kangra District, N.W. Himalaya; with Descriptions of new Genera and Species.—Part I. By F. MOORE, F.Z.S.

[Received January 25, 1882.]

(Plates XI., XII.)

The collection of Lepidoptera, of which the following is a list, was formed by Mr. Hocking whilst resident for several years at the hill-station of Dharamsala, and has been placed in my hands by Lord Walsingham for examination. Many of the species are accompanied by well-preserved specimens of the dried larval skin and pupa, several of which were previously unknown, and are therefore an exceedingly valuable contribution to our knowledge of their earlier stages.

R H O P A L O C E R A.

NYMPHALIDÆ.

EUPLOEINÆ.

SALATURA GENUTIA.

Papilio genutia, Cramer, Pap. Exot. iii. pl. 206. f. C, D (1779).
Papilio plexippus (part.), Fabr. Spec. Ins. p. 55.

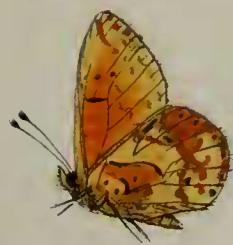
LIMNAS CHRYSIPPUS.

Papilio chrysippus, Linn. S. N. i. 2. p. 767 (1767).

Jullundur, in the plains, January 21st. Larva on madar (*Calotropis gigantea*).



1.



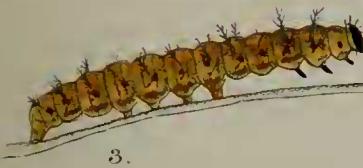
1a.



2.



2a.



3.



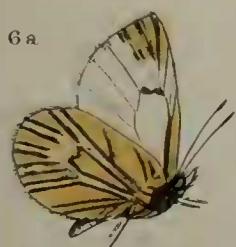
4.



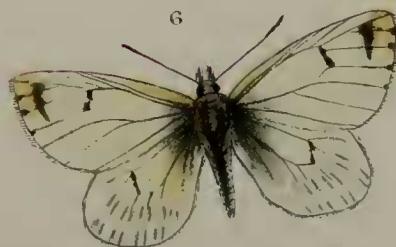
5.



4a.



6a.

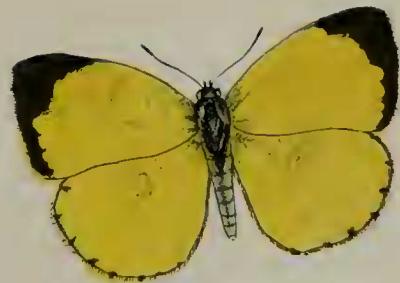


6.





2.



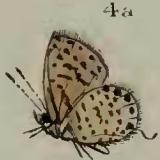
3.



1.



4.



4a.



5.



5a.



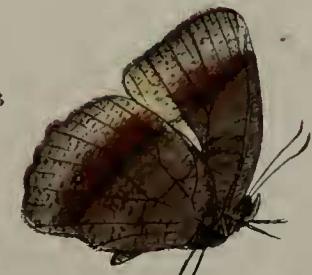
6.



6a.



7.



8.



TIRUMALA LIMNIACÆ.

Papilio limniacæ, Cramer, Pap. Exot. i. pl. 59. f. D, E (1775).

TIRUMALA SEPTENTRIONIS.

Danais septentrionis, Butler, Ent. Monthly Mag. 1874, p. 163.

CADUGA TYTIA.

Euplœa tytia, Gray, Lep. Ins. of Nepal, p. 9, pl. 9. f. 2 (1833–46).

Danais sita, Kollar, Hügel's Kaschmir, iv. p. 424, pl. 6 (1844).

Kangra valley.

"Double-brooded, March and July. Flies up to about 50 feet, and sails along motionless, and then sweeps down, but not very rapid."

CRASTIA VERMICULATA.

Euplœa vermiculata, Butler, P. Z. S. 1866, p. 276.

SATYRINÆ.**LETHE ROHRIA.**

Papilio rohria, Fabricius, Mant. Ins. ii. p. 45.

LETHE DYRTA.

Debis dyrta, Felder, Reise Novara, Lep. iii. p. 497 (1867).

LETHE HYRANIA.

♂. *Satyrus hyrania*, Kollar, Hügel's Kaschmir, iv. p. 449, pl. 17. f. 1, 2 (1844).

♀. *Satyrus isania*, Kollar, id. p. 448, pl. 16. f. 3, 4.

LETHE SIDONIS.

Debis sidonis, Hewitson, Exot. Butterflies, iii. p. 77, *Deb.* pl. 39. f. 16 (1863).

LETHE NICETAS.

Debis nicetas, Hewitson, Exot. Butterflies, iii. p. 78, *Deb.* pl. 39. f. 17, 18 (1863).

TANSIMA VERMA.

Satyrus verma, Kollar, Hügel's Kaschmir, iv. p. 447, pl. 16. f. 1, 2 (1844).

MELANITIS ISMENE.

Papilio ismene, Cramer, Pap. Exot. i. pl. 26. f. A, B (1775)

MELANITIS BELA.

Melanitis bela, Moore, Catal. Lep. Mus. E.I. C. i. p. 223 (1857).

ORINOMA DAMARIS.

Orinoma damaris, Gray, Lep. Ins. Nepal, p. 14, pl. 7. f. 2, 2a (1846); Doubleday & Hewits. D. Lep. pl. 63. f. 3.

"Taken at Jatingri. Very local and rare."

RHAPHICERA MOOREI.

Rhaphicera moorei, Butler, Ann. Nat. Hist. 1867, p. 164, pl. 4.
f. 4, 4 a, ♀.

AMECERA SCHAKRA.

Satyrus schakra, Kollar, Hügel's Kaschmir, iv. p. 446, pl. 15.
f. 3, 4 (1844).

HIPPARCHIA PARISATIS.

Satyrus parisatis, Kollar, Denkschrift Akad. Wien, math.-nat.
Cl. i. p. 52 (1850).

"Kangra valley; during the rains, June to September. Always
settles underneath overhanging rocks."

AULOCERA SWAHA.

Satyrus swaha, Kollar, Hügel's Kaschmir, iv. p. 444, pl. 14. f. 1,
2 (1844).

AULOCERA SARASWATI.

Satyrus saraswati, Kollar, Hügel's Kaschmir, iv. p. 445, pl. 14.
f. 3, 4 (1844).

AULOCERA PADMA.

Satyrus padma, Kollar, Hügel's Kaschmir, iv. p. 445, pl. 15.
f. 1, 2 (1844).

AULOCERA AVATARA.

Satyrus avatara, Moore, Catal. Lep. Mus. E.I. C. i. p. 229 (1857).
"Fly in June. Settle on the ground or rocks; 9000 feet; *A. padma* higher up than the others, 9000–10,000 feet."

CALLEREBIA SCANDA.

Erebia scanda, Kollar, Hügel's Kaschmir, iv. p. 452, pl. 17. f. 3,
4 (1844).

CALLEREBIA NIRMALA.

Erebia nirmala, Moore, P. Z. S. 1865, p. 501.

CALLEREBIA INTERMEDIA, n. sp.

Intermediate between *C. nirmala* and *C. cashapa*. Upperside
similar to *C. nirmala*, with one ocellus only on each wing. Unde-
side with two lower ocelli, a third ocellus between the upper median
and radial veins, and two small apical spots above.

Expanse, ♂ $2\frac{1}{10}$, ♀ $2\frac{4}{10}$ inches.

Hab. Kangra district. In coll. British Museum.

CALLEREBIA CASHAPA, n. sp.

Allied to *C. nirmala*. Male and female comparatively larger in
size. Upperside similar, but the hind wing having three well-formed
ocelli, the one between the radial and upper median vein sometimes

absent. Underside—fore wing less brightly chestnut coloured : hind wing with a complete series of ocelli, one between each vein ; some specimens with three anterior and two posterior ocelli, the upper one and sometimes the lowest being minute.

Expanse 2 to $2\frac{2}{10}$ inches.

Hab. Dharmasala (*Hocking*) ; Masuri (*Lang*) ; Simla. In coll. British Museum & F. Moore.

CALLEREBIA ANNADA.

Erebia annada, Moore, Catal. Lep. Mus. E.I. C. i. p. 226 (1857).

CALLEREBIA HYBRIDA.

Callerebia hybrida, Butler, P. Z. S. 1880, p. 147.

Callerebia nuda, Moore, P. Z. S. 1881, p. 306.

CALLEREBIA SHALLADA.

Erebia shallada, Lang, Journ. Asiat. Soc. Beng. 1880, p. 247.

EPINEPHILE PULCHELLA.

Epinephile pulchella, Felder, Reise Novara, Lep. iii. p. 490, pl. 69. f. 16 (1867).

Lahoul.

A distinct species from *E. neoza*, Lang.

CALYSISME BLASIUS.

Papilio blasius, Fabricius, Ent. Syst. Suppl. p. 426 (1798).

CALYSISME PERSEUS.

Papilio perseus, Fabricius, Syst. Ent. p. 488 (1775).

Papilio otrea, Cram. Pap. Exot. iv. pl. 314. f. A, B (1780), ♀.

Satyrus zopyrus, Kollar, Hügel's Kaschmir, iv. p. 450 (1844).

CALYSISME SUBFASCIATA, n. sp. (Plate XII. fig. 8.)

Nearest allied to *C. visala*. Upperside of both sexes with greyer marginal border, and the ocellus on fore wing only half the size. Underside of both sexes much greyer, more densely covered with black-speckled strigæ, the two transverse lines comparatively nearer each other, and the outer line bordered by a broad chestnut-brown suffused fascia.

Expanse, ♂ $1\frac{7}{8}$, ♀ 2 inches.

Hab. Dharmasala. In coll. Rev. Hocking.

YPHIMA NIKEA.

Ypthima nikæa, Moore, P. Z. S. 1874, p. 567.

YPHIMA BALDUS.

Papilio baldus, Fabricius, Syst. Ent. App. p. 809 (1775) ; Donov. Ins. India, pl. 36. f. 2.

YPHIMA AVANTA.

Ypthima avanta, Moore, P. Z. S. 1874, p. 567.

YPTHIMA INDECORA, n. sp. (Plate XII. fig. 7.)

Nearest to *Y. inica*, Hewits. Upperside brown : fore wing with a darker subbasal oblique shade ; a prominent, bipupilled, subapical ocellus : hind wing with two smaller subanal ocelli. Underside covered with very slender grey strigæ ; two very faint brown fasciæ crossing middle of both wings, those on the hind wing waved : hind wing with two subapical and three subanal, extremely minute, and indistinct silver-pupilled ocelli.

Expanse, ♂ $1\frac{2}{8}$, ♀ $1\frac{3}{8}$ inch.

Hab. Kangra district. In coll. Rev. Hocking & F. Moore.

YPTHIMA NAREDA.

Satyrus nareda, Kollar, Hügel's Kaschmir, iv. p. 451 (1844).

Ypthima nareda, Hewits. Trans. Ent. Soc. Lond. 1865, p. 285, pl. 17. f. 6 (nec f. 7).

NYMPHALINÆ.**DILIPA MORGIANA.**

Apatura morgiana, Westw. Doubleday's Gen. D. Lep. p. 305 (1850).

Dilipa morgiana, Moore, Catal. Lep. Mus. E.I. C. i. p. 201, pl. 6 a. f. 5.

"August. 6000 feet."

LIMENITIS TRIVENA.

Limenitis trivena, Moore, Ent. Monthly Mag. 1864, p. 133.

CHARAXES FABIUS.

Papilio fabius, Fabricius, Spec. Ins. ii. p. 12 (1781), ♂.

Papilio solon, Fabr. Ent. Syst. iii. 1, p. 69 (1793), ♀.

"Dharmsala ; July. Taken at sugar."

EULEPIS ATHAMAS.

Papilio athamas, Drury, Ill. Exot. Ins. i. pl. 2. f. 4 (1773).

Kangra ; Kulu ; 3000 feet.

EULEPIS HAMASTA, n. sp.

Smaller than *E. athamas*. Fore wing differs in the medial band being broader in the male, the subapical spot also broader and more regularly quadrate, its upper angle being nearer the apical spot, of which latter there are two in the female, one above the other : hind wing with a more prominent submarginal series of white spots, the three lower spots being conspicuously larger and lunular in shape, with contiguous greyish outer lunules.

Expanse $2\frac{1}{2}$ to $2\frac{3}{4}$ inches.

Hab. Dharmasala, 6200 feet ; March, June. In coll. British Museum.

"The wildest butterfly that I know. Takes very long flights at a time and returns to the same point. Very shy."

EUTHALIA GARUDA.

Adolias garuda, Moore, Catal. Lep. Mus. E.I. C. i. p. 186 (1857); Trans. Ent. Soc. 1859, p. 64, pl. 3. f. 2.

"Larva feeds on mango. October."

EUTHALIA PATALA.

Adolias patala, Kollar, Hügel's Kaschmir, iv. p. 435 (1844).

"Flys about oaks. June to September."

STIBOCHIONA NICEA.

Adolias nicea, Gray, Lep. Ins. Nepal, p. 13, pl. 12. f. 1 (1846).

"Flies like *Papilio pammon*, following the line of a hedge and passing in and out between the bushes."

SYMPHÆDRA NAIS.

Papilio nais, Forster, Novæ Spec. Ins. Cent. i. p. 73 (1771).

Papilio thyelia, Fabr, Ent. Syst. iii. l, p. 142 (1793); Donov. Ins. India, pl. 31. f. 3.

"Kangra district generally; banks of the Beas, about 2000 feet elevation."

KALLIMA HUGELI.

Paphia hugelii, Kollar, Hügel's Kaschmir, iv. p. 432, pl. 9 (1844).

Kallima hugelii, Moore, Trans. Ent. Soc. 1879, p. 12.

"Single-brooded in July. Flies about till the cold weather in November, and then hibernates, and comes out again in April. Taken at sugar in April."

PRECIS IPHITA.

Papilio iphita, Cram. Pap. Exot. iii. pl. 209. f. C, D (1779).

"Always pitches on the ground."

JUNONIA LEMONIAS.

Papilio lemonias, Linn. Syst. Nat. i. 2, p. 770 (1767).

JUNONIA ORITHYA.

Papilio orithya, Linn. Syst. Nat. i. 2, p. 770 (1767).

JUNONIA ÆNONE.

Papilio œnone, Linn. Syst. Nat. i. 2, p. 770 (1767).

JUNONIA ASTERIE.

Papilio asterie, Linn. Syst. Nat. i. 2, p. 769 (1767).

JUNONIA ALMANA.

Papilio almana, Linn. Syst. Nat. i. 2, p. 769 (1767); Donov. Ins. China, pl. 38. f. 2.

PSEUDERGOLIS WEDAH.

Ariadne wedah, Kollar, Hügel's Kaschmir, iv. p. 437 (1844).

Precis veda, Kirby, Catal. Lep. p. 191 (1871).

Precis hara, Moore, Catal. Lep. Mus. E.I. C. i. p. 143, pl. 3 a. f. 1 (1857).

ERGOLIS ARIADNE.

Papilio ariadne, Linn. Syst. Nat. i. 2, p. 778 (1767).

CYRESTIS THYODAMAS.

Cyrestis thyodamas, Boisd. Cuvier's Règ. Anim., Ins. ii. pl. 138. f. 4 (1836).

Amathusia ganescha, Kollar, Hügel's Kasch. iv. p. 430, pl. 7. f. 3, 4 (1844).

" June to September ; hibernates afterwards. Sits with open wings upon hanging leaves of oak and rhododendron."

VANESSA CHARONIA.

Papilio charonia, Drury, Illust. Exot. Ins. i. pl. 15. f. 1, 2 (1773).

VANESSA XANTHOMELAS.

Papilio xanthomelas, Denis et Schiff. Wien. Verz. p. 175 (1776).

" Larva on willow, March 30. Fed up April 6th; in pupa state from 16th to 24th; imago emerged May 9th."

VANESSA KASCHMIRENSIS.

Vanessa kaschmirensis, Kollar, Hügel's Kasch. iv. p. 442, pl. 11. f. 3, 4 (1844).

" Larva on nettle, April."

PYRAMEIS CARDUI.

Papilio cardui, Linn. Syst. Nat. i. 2, p. 774 (1767).

" Larva on nettle; May and August, 6200 feet."

PYRAMEIS INDICA.

Papilio indica, Herbst, Naturs. Schmett. vii. pl. 180. f. 1, 2 (1794).

SEPHISA¹ DICHROA.

Limenitis dichroa, Kollar, Hügel's Kasch. iv. p. 429, pl. 8. f. 1, 2 (1844).

Castalia dichroa, Moore, Catal. Lep. Mus. E.I. C. i. p. 199.

HESTINA ZELLA.

Hestina zella, Butler, Trans. Ent. Soc. 1869, p. 9, fig. Kangra district generally.

NEPTIS ASTOLA.

Neptis astola, Moore, P. Z. S. 1872, p. 560.

¹ Proposed in place of *Castalia*, previously used.

NEPTIS MAHENDRA.

Neptis mahendra, Moore, P. Z. S. 1872, p. 560, pl. 32. f. 3.

NEPTIS ANANTA.

Neptis ananta, Moore, Catal. Lep. Mus. E.I. C. i. p. 166, pl. 4a. f. 3 (1857); P. Z. S. 1858, p. 5.

"Kulu; very rare."

NEPTIS NANDINA.

Neptis nandina, Moore, Catal. Lep. Mus. E.I. C. i. p. 168, pl. 4a. f. 7 (1857).

NEPTIS AMBA.

Neptis amba, Moore, P. Z. S. 1858, p. 7, pl. 49. f. 4.

"Kulu."

NEPTIS AMBOIDES, n. sp.

Allied to but smaller than *N. amba*. Fore wing with the discoidal streak broader; the discal spots also broader and more compactly disposed; hind wing with a broader subbasal band, and a more uniformly curved and narrower submarginal band.

Expanse, ♂ $2\frac{1}{8}$, ♀ $2\frac{2}{8}$ inches.

Hab. Ruttun Pir, Cashmere (*Reid*); Kangra district (*Hocking*). In coll. F. Moore and British Museum.

ATHYMA OPALINA. (Plate XI. fig. 3, larva.)

Limenitis opalina, Kollar, Hügel's Kaschmir, iv. p. 427 (1844).

Athyma opalina, Moore, Catal. Lep. Mus. E.I. C. i. p. 171, pl. 5a. f. 2.

"Larva on kusmul, August 15th. Deep green, with red spines; moulted in a day or two; the dorsal line yellow, lateral pale green. Pupa of the brightest silver tinsel. Perfect insect emerged Sept. 9th."

ATHYMA LEUCOTHOË.

Papilio leucothoë, Linn. Syst. Nat. i. 2, p. 780 (1767); Sulzer, Gesch. Ins. pl. 18. f. 2, 3.

ATHYMA ASURA.

Athyma asura, Moore, Catal. Lep. Mus. E.I. C. i. p. 350, pl. 5a. f. 1 (1857).

"Kulu; very rare."

APATURA MISIPPUS.

Papilio misippus, Linn. Syst. Nat. i. 2, p. 767 (1767).

Diadema misippus, Butl. Catal. Fabr. Lep. B. M. p. 97; Trans. Ent. Soc. 1869, p. 278.

APATURA BOLINA.

Papilio bolina, Linn. Syst. Nat. i. p. 781 (1767); Clerck, Icones, pl. 21. f. 2.

Diadema bolina, Butler, Trans. Ent. Soc. 1869, p. 278.

"Hot valleys. In flower-gardens, from May to September."

APATURA JACINTHA.

Papilio jacintha, Drury, Illust. Exot. Ins. ii. pl. 21. f. 1, 2 (1773).

"Hills, June to September. Settling upon oak (*Quercus incana*). Never found in company with preceding."

ACIDALIA NIPHE.

Papilio niphe, Linn. Syst. Nat. i. 2, p. 785 (1767); Drury, Illust. Exot. Ins. i. pl. 6. f. 1.

"Found in the valleys."

ARGYNNIS CHILDRENI.

Argynnис childreni, Gray, Zool. Misc. p. 33 (1831); Lep. Ins. Nepal, p. 11, pl. 11.

Argynnис sakontala, Kollar, Hügel's Kasch. iv. p. 439, pl. 12 (1844).

"On thistles, 6000 feet."

ARGYNNIS JAINADEVA.

Argynnис jainadeva, Moore, Ent. Monthly Mag. 1864, p. 131; P. Z. S. 1865, p. 495, pl. 30. f. 1.

ARGYNNIS ISSÆA.

Argynnис issæa, Moore, Catal. Lep. Mus. E.I. C. i. p. 156 (1857). "Hills, flying over the grassy slopes."

ARGYNNIS BARALACHA, n. sp. (Plate XI. figs. 1, 1 a.)

Male. Upperside fulvous; lower basal area of both wings minutely black-speckled: fore wing with a black recurved streak within the cell, a lunular streak at its end; a discal transverse zig-zag series of broader streaks, two outer rows of small spots, which are indistinct at the apex, and a marginal, indistinct, dentated lunular speckled line: hind wing with two less distinct and more slender cell-streaks, discal row of spots, two outer rows of spots (of which the inner row is indistinct), and a marginal speckled line.

Underside—fore wing paler fulvous, with the cell, discal, and inner row of black spots as above showing very indistinctly; the costal border, two streaks from the apex, and short X-shaped marginal marks being yellow: hind wing yellow, with a very irregular transverse subbasal, discal, and a marginal fulvous-red band; the subbasal band bordered outwardly by linear pearly streaks, the discal band by indistinct pearly lunules, and the marginal band traversed by pearly X-shaped marks; the discal and marginal bands more or less confluent; a small pearly spot also within the cell.

Expanse $1\frac{5}{8}$ inch.

Hab. Ladak. In coll. British Museum.

MELITÆA CASHMIRENSIS.

Melitæa cashmirensis, Moore, P. Z. S. 1874, p. 267, pl. 43. f. 4.

MELITÆA BALBITA.

Melitæa balbita, Moore, P. Z. S. 1874, p. 268, pl. 43. f. 5.

"Rhotung Pass."

SYMBRENTHIA HYPOCLUS. (Plate XI. figs. 4, 4 *a*, larva.)

Papilio hypocclus, Cramer, Pap. Exot. iii. pl. 220. f. C, D (1782).

"Larva on nettle, August, 6200 feet."

ATELLA PHALANTA.

Papilio phalanta, Drury, Illust. Exot. Ins. i. pl. 21. f. 1, 2 (1773).

"Found in the valleys."

ACRÆINÆ.**PAREBA VESTA.**

Papilio vesta, Fabr. Mant. Ins. ii. p. 14 (1787).

Acræa anomala, Kollar, Hügel's Kasch. iv. p. 425, pl. 3. f. 3, 4 (1844).

"Larva feeds on the willow-leaved nettle (*Bœhmeria talicifolia*). Imago, July to September. Eggs deposited in September, and hatch in about twenty days. Length of young larva 3 to 4 lines, entirely black. When about three weeks old they moult and then hibernate, reappearing in the following April. They moult again early in May, when they assume the red head. The larvæ generally feed on the upper branches of the plant, are gregarious, and drop to the ground when disturbed. Third moult early in June, about the middle of which month they suspend themselves by the tail near the bottom of the stems of the bushes, and there change to the pupa state. The imago appears in about fifteen days, in the first or second week in July. A few come out in August and September, but not in sufficient numbers to constitute a succession of broods. The imago is seldom found far from the food-plant, which grows near running water.

"It is a very local insect, but, where occurring, abundant. It is to be found in wet ravines at from 3000 to 4000 feet elevation in Kulu. It is not a rapid flier, and is easily captured. When at rest it may be taken by the fingers. It is very constant in its appearance, frequenting the same localities year after year. The imago does not hibernate."—*Note by A. Graham Young.*

ERYCINIDÆ.**LIBYTHÆINÆ.****LIBYTHEA MYRRHA.**

Libythea myrrha, Godt. Enc. Méth. ix. p. 171.

"Kangra valley, May to December. A tree-perching insect. Settles with vertical wings."

NEMEOBIINÆ.**DODONA DURGA.**

Melitæa durga, Kollar, Hügel's Kaschmir, iv. p. 441, pl. 13. f. 3, 4 (1844).

DODONA EUGENES.

Dodona eugenae, Bates, Journ. Linn. Soc., Zool. ix. p. 371 (1867).

ABISARA SUFFUSA, n. sp.

Allied to *A. angulata*, Moore (P. Z. S. 1878, p. 833). Smaller, the male being of a deeper tint, with the fasciæ straighter and suffused with grey. Female of a much duller colour and suffused with grey, the medial transverse dark fascia less angular on both wings, and the outer fasciæ much less distinct, broader, and more suffused.

Expanse, ♂ $1\frac{5}{8}$, ♀ $1\frac{4}{8}$ inch.

Hab. Chumba, 10,000 feet. In coll. British Museum.

LYCÆNIDÆ.

PITHECOPS ZALMORA.

Pithecopus zalmora, Butler, Catal. Fabrician Lep. Brit. Mus. p. 161 (1870).

CURETIS DENTATA.

Curetis dentata, Moore, P. Z. S. 1879, p. 138.

CYANIRIS CŒLESTINA.

Lycæna cœlestina, Kollar, Hügel's Kaschmir, iv. p. 423 (1844).

Lycæna kollari, Westwood, Doubleday's Gen. D. Lep. p. 491 (1852).

Polyommatus kasmira, Moore, P. Z. S. 1865, p. 503, pl. 31. f. 1.

CYANIRIS HUEGELII.

Lycæna argiolus, Kollar, Hügel's Kaschmir, iv. p. 423 (nec Linn.).

Differs from *C. cœlestina* in its larger size. *Male*. Upperside similar in colour, but of a darker blue tint; fore wing with a more slender blackish marginal band; hind wing with a clearly defined marginal line. *Female* more dusky throughout than in *C. cœlestina*; fore wing with broader blackish marginal borders and discocellular lunule; hind wing with the blackish costal border and marginal spots broader, the latter with well-defined inner pale dentate marks, the inner area beyond and the veins also dusky-black. Underside with similar but more distinct markings than in *C. cœlestina*, the discal series on the hind wing more linear in shape, the marginal spots and submarginal lunular band much more prominent.

Expanse, ♂ ♀ $1\frac{5}{8}$ to $1\frac{8}{8}$ inch.

Hab. N.W. Himalaya (Kaschmir; Simla; Masuri; Dharmasala). In coll. F. Moore and British Museum.

This species has hitherto been considered to be Kollar's *L. cœlestina*; but both his description and measurements undoubtedly agree with *C. kasmira*.

CYANIRIS VARDHANA.

Polyommatus vardhana, Moore, P. Z. S. 1874, p. 572, pl. 66. f. 5.

CYANIRIS PUSPA.

Polyommatus puspa, Horsf. Catal. Lep. Mus. E.I. C. (1828), p. 67.

"Kulu."

CHILADES VARUNANA.

Polyommatus varunana, Moore, P. Z. S. 1865, p. 772, pl. 41. f. 6.

CHILADES PUTLI.

Lycæna putli, Kollar, Hügel's Kaschmir, iv. p. 422 (1844).

ZIZERA MAHĀ.

Lycæna maha, Kollar, Hügel's Kaschmir, iv. p. 422 (1844).

Lycæna chandala, Moore, P. Z. S. 1865, p. 504, pl. 31. f. 5.

ZIZERA INDICA.

Lycæna indica, Murray, Trans. Ent. Soc. 1874, p. 525, pl. 10. f. 2, 3.

ZIZERA PYGMÆA.

Lycæna pygmæa, Snellin, Tijd. voor Ent. xix. p. 153, pl. 7. f. 3 (1876).

Identical with Sumatran and Ceylonese specimens.

AZANUS UBALDUS.

Papilio ubaldus, Cram. Pap. Exot. iv. pl. 390. f. L, M (1782).

Lycæna zena, Moore, P. Z. S. 1865, p. 505, pl. 31. f. 9.

TARUCUS NARA.

Lycæna nara, Kollar, Hügel's Kaschmir, iv. p. 421 (1844).

TARUCUS ALTERATUS, n. sp. (Plate XII. figs. 4, 4 a.)

Also allied to *T. nara*; smaller; colour paler and of a more decided blue tint; fore wing with a slender discocellular dusky lunule; hind wing with a small dusky spot above the tail, and a slender marginal white line. Cilia brownish white. Underside dull pale greyish ochreous; both wings with similarly disposed markings, which are more slender, paler, and much less distinct, those on the hind wing being reddish ochreous, the marginal metallic spots more or less golden.

Expanse $\frac{1}{2}$ inch.

Hab. N.W. Himalaya (Reid); Dharmasala (Hocking). In coll. F. Moore and British Museum.

TARUCUS VENOSUS, n. sp. (Plate XII. figs. 6, 6 a.)

Allied to *T. theophrastus* and *T. nara*. Wings larger and broader; fore wing less triangular, the exterior margin more convex; colour duller blue and of a slight violaceous tinge; both wings with a broad marginal dusky border, similar to that in male of *Zizera chandala*; veins dark-lined: fore wing with a broad dusky spot, and hind wing with a slender lunule at end of the cell, and a

slender white marginal line above the tail. Female entirely violet-brown, with the exception of a very few blue scales sparsely disposed on the basal area; an indistinct darker cell-spot on fore wing, and a spot above the tail. Cilia whitish. Underside similar to the above species, all the markings, however, being broader in both sexes.

Expanse, ♂ ♀, $1\frac{1}{2}$ inch.

Hab. Dharmasala. In coll. British Museum.

TARUCUS PLINIUS.

Hesperia plinius, Fabr. Ent. Syst. iii. p. 284 (1793); Donov. Ins. India, pl. 41. f. 1.

CASTALIUS ROSIMON.

Papilio rosimon, Fabr. Syst. Ent. p. 523 (1775).

EVERES DIPORA.

Lycæna dipora, Moore, P. Z. S. 1865, p. 506, pl. 31. f. 8.

NACADUBA ARDATES.

Lycæna ardatus, Moore, P. Z. S. 1874, p. 574, pl. 67. f. 1.
"Kulu."

CATOCHRYSOPS STRABO.

Hesperia strabo, Fabr. Ent. Syst. iii. p. 287 (1793).

Lycæna kandarpa, Horsf. Catal. Lep. Mus. E.I. C. (1829), p. 82.
Lycæna asoka, Kollar, Hügel's Kasch. iv. p. 419, ♂.
Lycæna didda, Kollar, Hügel's Kasch. iv. p. 420, ♀.

CATOCHRYSOPS CNEJUS.

Hesperia cnejus, Fabr. Ent. Syst. Suppl. p. 430 (1798).

Lycæna pandia, Kollar, Hügel's Kasch. iv. p. 418.

POLYOMMATUS BÆTICUS.

Papilio bæticus, Linn. Syst. Nat. i. 2, p. 789 (1767).

LAMPIDES AELIANUS.

Hesperia aelianus, Fabr. Ent. Syst. iii. p. 280 (1793).

LYCÆNA NAZIRA.

Polyommatus nazira, Moore, P. Z. S. 1865, p. 504, pl. 31. f. 4.

LYCÆNA ARIANA.

Polyommatus ariana, Moore, P. Z. S. 1865, p. 504, pl. 31. f. 2.

LYCÆNA SUTLEJA, n. sp.

Near to *L. boisduvalii* and *L. ariana*. Upperside darker glossy blue, the marginal band narrower; no dusky streaks ascending the veins; the marginal spots on hind wing less prominent. Underside lilacine ochreous-grey, darkest on hind wing; markings similar to *L. boisduvalii*, except that the spot within the cell is further from the discocellular lunule, this spot being situated inward of the end

of lower median vein; the discal row of spots are more linearly disposed, the marginal spots having their red inner borders more slenderly black-lined; hind wing with a black centre to the discellular lunule: upper discal spots nearer together, thus giving a wider space between the upper one and basal spot; the red borders to marginal spots are somewhat broader and more slenderly black-streaked.

Expanse $1\frac{4}{10}$ inch.

Hab. Kangra district. In coll. British Musenm.

LYCÆNA METALLICA.

Lycæna metallica, Felder, Reise Novara, Lep. ii. p. 283, pl. 35. f. 7, 8 (1865), ♂.

LYCÆNA OMPHISA.

Polyommatus omphisa, Moore, P. Z. S. 1874, p. 573, pl. 66. f. 2. Taken in Ladak.

CHRYSOPHANUS PHLEAS.

Papilio phleas, Linn. Syst. Nat. i. 2, p. 793 (1767).

CHRYSOPHANUS KASYAPA.

Chrysophanus kasyapa, Moore, P. Z. S. 1865, p. 506, pl. 31. f. 10.

CHRYSOPHANUS PAVANA.

Thecla pavana, Kollar, Hügel's Kaschmir, iv. p. 416, pl. 5. f. 5, 6 (1844).

Thecla panava, Westw. Gen. D. Lep. p. 487 (1852).

THECLA SYLA.

Thecla syla, Kollar, Hügel's Kaschmir, iv. p. 414, pl. 4. f. 7, 8 (1844).

Dipsas syla, Hewits. Ill. D. Lep. pl. 26. f. 3.

THECLA ATAXAS.

Dipsas ataxas, Doubleday & Hewits. Gen. D. Lep. pl. 74. f. 7 (1852); Hewits. Ill. D. Lep. pl. 26. f. 6.

THECLA ODATA.

Dipsas odata, Hewits. Ill. D. Lep. p. 66, pl. 30. f. 13, 14 (1865); Moore, P. Z. S. 1865, p. 507.

THECLA BIRUPA.

Dipsas birupa, Moore, Ann. & Mag. Nat. Hist. 1877, xx. p. 51.

HORAGA ONYX.

Thecla onyx, Moore, Catal. Lep. Mus. E.I. C. i. p. 30, ♂ (1857).

Male. Violet-brown; fore wing with the lower basal and discal area cyaneous blue; discal white spot large, of the same size as in female *H. viola*; hind wing paler, the medial area cyaneous blue. Underside pale olivaceous brownish-ochreous, the discal band on fore

wing attenuated anteriorly and extending to costal border; the band on hind wing very broad and irregular; anal and subanal spots small.

Female. Paler; discal spot very large and oval; band on underside as in male.

Expanse, ♂ ♀ $1\frac{3}{10}$ inch.

Hab. N.W. Himalaya (Deyra Doon; Dharmasala).

Taken by Mr. Hocking on quince tree, at 6000 feet elevation.

The type specimen described above is now in the British-Museum collection. Its locality label is "Himalaya," not Burmah, as stated in my original description.

HORAGA VIOLA, n. sp.

Male. Violet-brown; fore wing with a small white discal spot.

Female. Violet-brown, palest on the hind wing; lower basal and discal area of both wings dull cyaneous blue, discal white spot larger. Underside darkish violaceous brownish-ochreous, the white discal spot continued to posterior margin; the band on hind wing narrowly white in both sexes.

Expanse, ♂ $\frac{9}{10}$, ♀ 1 inch.

Hab. Dharmasala. In coll. British Museum.

ILERDA TAMU.

Polyommatus tamu, Kollar, Hügel's Kasch. iv. p. 417, pl. 5. f. 7, 8, ♂.
Ilerda tamu, Hewitson, Illust. D. Lep. p. 57.

Allied to *I. androcles*. *Male.* Upperside blackish brown; with the medial, basal, and discal area of fore wing and medial area of hind wing sparsely covered with dull metallic greenish-blue scales, these scales scarcely appearing below the submedian vein on the fore wing and being less thickly disposed on the hind wing; anal red lunules narrow and distinct.

Female paler brown; fore wing with an oblique discal slightly-curved short red band; hind wing with a marginal narrow sinuous red band.

Underside dull saffron-yellow; markings similar to those of *I. androcles*.

Expanse $1\frac{4}{10}$ inch.

Hab. N.W. Himalayas, Masuri (*Lang*); Dharmasala (*Hocking*). In coll. F. Moore and British Museum.

ILERDA CORUSCANS, n. sp.

Smaller than *I. androcles*. *Male* of a denser blackish-brown colour: fore wing with the lower basal and discal area, and medial area of hind wing entirely covered with glittering metallic blue scales, which in some lights are of a smalt-blue tint; two slender, short, red anal lunules.

Female paler brown: fore wing with a narrow red oblique band, and hind wing with a marginal sinuous red band.

Expanse $1\frac{3}{10}$ inch.

Hab. N.W. Himalaya: Bisahur, between Sarhan and Tranda (*Hellard*); Dharmasala (*Hocking*). In coll. F. Moore and British Museum.

ILERDA ODA.

Ilerda oda, Hewits. Ill. D. Lep. p. 58, pl. 24. f. 9, 10.

ILERDA SENA.

Polyommatus sena, Kollar, Hügel's Kaschm. iv. p. 415, pl. 5. f. 3, 4 (1844).

IRAOTA TIMOLEON.

Papilio timoleon, Stoll, Suppl. Cram. Pap. Exot. v. pl. 32. f. 4 (1790).

HYPOLYCÆNA MILIONIA.

Myrina mylionia, Hewits. Ill. D. Lep. Suppl. p. 5, pl. 3. f. 79, 80 (1869).

"9000 feet."

HYPOLYCÆNA NASAKA.

Thecla nasaka, Horsf. Catal. Lep. Mus. E.I. C. (1829), p. 91.

Identical with Javan type.

HYPOLYCÆNA CHANDRANA, n. sp. (Plate XI. figs. 2, 2 a.)

Allied to *H. nasaka*. *Male*. Upperside violet-brown : fore wing with the lower basal and discal area dull violet-blue, and the medial area of hind wing purplish violet-blue ; marginal line and anal lobe black. Cilia whitish.

Underside olive-grey : fore wing with a broad discocellular slender black-lined white-bordered streak, a similar broken discal band, and a similar marginal narrower lunular band : hind wing with a similar discocellular streak, a discal band, which is broken beyond the cell and bent upwards above anal angle, and a marginal dentated band ending in a large red spot and anal lobe and an intervening streak, the spot and anal lobe black-centred, the streak with metallic-green borders ; a white-bordered black spot on costa near the base, another at end of the cell, and a less distinct spot above anal angle.

Expanse 1 $\frac{1}{8}$ inch.

Hab. Lahul. In coll. British Museum.

NADISEPA, n. g.

Allied to *Deudorix*. Fore wing more acuminate at the apex ; male furnished with a tuft of hair on middle of posterior margin : hind wing more attenuated hindward ; exterior margin slightly sinuous ; a broad conical depressed glandular spot between the costal and subcostal veins. Venation similar. Palpi smaller, shorter, second joint of more equal width ; antennal club shorter.

NADISEPA JARBAS.

Papilio jarbas, Fabr. Mant. Ins. ii. p. 68 (1787).

Thecla jarbus, Horsf. Catal. Lep. Mus. E.I. C. (1829), p. 93.

BASPA, n. g.

Differs from typical *Deudorix* (*D. epijarbas*). *Male* with a less triangular form of fore wing; the hind wing more oblique on costal and exterior margins, the apex very convex. Venation similar. *Female*: fore wing more triangular: hind wing narrower and less convex. Second joint of palpi much shorter; antennal club much shorter and abruptly formed. Sexes alike in colour.

BASPA MELAMPUS.

Papilio melampus, Cram. Pap. Exot. iv. pl. 362. f. G, H (1782).

Thecla sorya, Kollar, Hügel's Kasch. iv. p. 414, pl. 5. f. 1, 2 (1844).

DEUDORIX EPIJARBAS.

Dipsas epijarbas, Moore, Catal. Lep. Mus. E.I. C. i. p. 32 (1857).

Deudorix epijarbas, Hewits. Ill. D. Lep. pl. 7. f. 16-18.

VIRACHOLA PERSE.

Deudorix perse, Hewits. Ill. D. Lep. p. 18, pl. 8. f. 24-26 (1863).

VIRACHOLA ISOCRATES.

Hesperia isocrates, Fabr. Ent. Syst. iii. p. 266 (1793), ♂.

Thecla isocrates, Westw. Tr. Ent. Soc. 1836, p. 4, pl. 1.

BIDASPA, n. g. = *lara*.

Nearest to *Virachola*. Fore wing comparatively more triangular; third subcostal emitted at a slight angle before end of the cell: hind wing less produced hindward; costal margin longer, apex less convex; cell triangular; first subcostal emitted at one fifth before end of the cell; the broad conical depressed glandular spot terminates before reaching the first subcostal branch, and does not extend below into the cell; tail slender. Palpi less compactly squamose; antennal club shorter.

Type *B. nissa*.

BIDASPA NISSA.

Thecla nissa, Kollar, Hügel's Kaschmir, iv. p. 412, pl. 4. f. 3, 4 (1844).

Deudorix nissa, Hewits. Ill. D. Lep. p. 23, pl. 10. f. 42, 43 (nec f. 44).

HYSUDRA, n. g.

Allied to *Bidaspa*. Fore wing less triangular in form, the exterior margin slightly convex; no tuft on posterior margin of male: hind wing less produced hindward; no costal depressed granular spot; tail shorter.

HYSUDRA SELIRA.

Deudorix selira, Moore, P. Z. S. 1874, p. 272.

Deudorix nissa, Hewits. Ill. D. Lep. pl. 10. f. 44 (nec Kollar).

RAPALA GRISEA.

Deudorix grisea, Moore, P. Z. S. 1879, p. 140.

APHNÆUS ETOLUS.

Papilio etolus, Cram. Pap. Exot. iii. pl. 208. f. E, F (1782).

APHNÆUS TRIFURCATA, n. sp.

Male. Upperside violet-brown ; basal area of a more greyish-blue tint than in *A. ictis*, the orange spot trifurcate and triangular.

Female paler ; basal area greyish vinous-brown ; orange spot on fore wing small, not larger than that of the male. Underside of a deeper chrome-yellow, the silver-streaked bands similarly disposed, but all nearly dusky black throughout their breadth ; the marginal slender spots more prominent.

Expanse, ♂ $1\frac{3}{10}$, ♀ $1\frac{5}{10}$ inch.

Hab. N.W. Himalaya, Dharmasala (*Baden Powell and Hocking*). In coll. F. Moore and British Museum.

APHNÆUS UNIFORMIS, n. sp.

Fore wing comparatively narrower and more acutely pointed at the apex than in *A. trifurcata* ; hind wing shorter, but longer hindwards, and the exterior margin even and less convex anteriorly. Upperside dull bluish brown : fore wing unmarked : hind wing with an indistinct dull ochreous anal spot speckled with grey and black. Underside dull pale brownish ochreous, the transverse bands nearly obsolete, being indicated by very slender indistinct silvery-speckled lines ; anal lobe black-spotted.

Expanse $1\frac{5}{12}$ inch.

Hab. Mount Meru, Wurdhan. In coll. British Museum.

APHNÆUS ELIMA.

Aphnæus elima, Moore, Ann. & Mag. Nat. Hist. 1877, p. 51.

PRATAPA ICETAS.

Iolaus icetas, Hewits. Ill. D. Lep. p. 44, pl. 18. f. 6, 7 (1865), ♀.

LOXURA ATYMNUS.

Papilio atymnus, Cram. Pap. Exot. iv. pl. 331. f. D, E (1782).

SURENDRA QUERCETORUM.

Amblypodia quercketorum, Moore, Catal. Lep. Mus. E.I. C. i. p. 42, pl. 1 a. f. 7 (1857).

PANCHALA, n. g.

Wings small, short, broad : fore wing much arched ; exterior margin erect, slightly convex hindwards ; cell extending beyond half the wing ; costal vein extending to near half the margin ; first subcostal emitted at two fifths and second at one fifth before end of the cell, third bifid at one third before the apex, fifth from slight angle at end of the cell ; discocellular slightly bent near upper

end, radial from the angle; middle median near end of the cell, lower at one fourth before the end, curved downwards; submedian straight: hind wing very convex externally; costa much recurved from the base, apex angular; costal vein recurved, extending to the apex; first subcostal emitted at one third before end of the cell; discocellular slightly bent in the middle, radial from the angle; two upper medians from end of the cell, lower at one fourth before the end; submedian straight, internal recurved. Body short, thorax moderate; palpi porrect, compactly squamose, second joint projecting half its length beyond the head, third joint one third its length, slender; legs compactly squamose; antennæ short, thickening to the apex.

Type *P. ganesa*.

PANCHALA GANESA.

Amblypodia ganesa, Moore, Catal. Lep. Mus. E.I. C. i. p. 44, pl. 1 a. f. 8 (1857).

PANCHALA DODONEA.

Amblypodia dodonea, Moore, Catal. Lep. Mus. E.I. C. i. p. 43, pl. 1 a. f. 8 (1857).

PANCHALA RAMA.

Theela rama, Kollar, Hügel's Kasch. iv. p. 412, pl. 4. f. 1, 2 (1844).

PAPILIONIDÆ.

PIERINÆ.

TERIAS HECABE.

Papilio hecabe, Linn. Syst. Nat. i. 2, p. 763 (1767).

TERIAS EXCAVATA, n. sp.

Near *T. hecabe*. Fore wing with the marginal band of a similar form but not quite so wide, the lower portion extending less from the angle: hind wing with a marginal slender dentated line. *Female*. Fore wing with a slightly wider marginal band; hind wing with a very slender marginal dentated line. Underside with pale markings; the apical streak pale in the male, prominent in the female.

Expanse $1\frac{5}{8}$ inch.

Hab. Kangra district (Dharmasala). In coll. British Museum and F. Moore.

TERIAS PURREEA, n. sp.

Allied to *T. æsiope*. Smaller in size; the marginal band on fore wing one third less in width at upper and lower ends, the upper and lower angles of the excavated portion less acute: hind wing with a slight marginal dentated line. Underside with similar but narrower and smaller markings.

Expanse $1\frac{5}{8}$ to $1\frac{6}{8}$ inch.

Hab. Kangra distret. In coll. British Mnseum.

TERIAS IRREGULARIS, n. sp. (Plate XII. fig. 3.)

Near to *T. fimbriata*. Wings comparatively shorter; of the same tint of colour: fore wing with the marginal band broadly oblique at the apex, excavated in the middle, and sinuous at posterior end: hind wing with a marginal slender dentated line. *Female* paler, the marginal band on fore wing with sharper angles; minute marginal dentated spots on hind wing. Underside with very prominent chestnut-brown markings.

Expanse $1\frac{7}{10}$ inch.

Hab. Kangra district. In coll. British Museum.

TERIAS FIMBRIATA.

Terias fimbriata, Wallace, Trans. Ent. Soc. 1867, p. 323.

TERIAS APICALIS, n. sp. (Plate XII. fig. 2.)

Also allied to *T. fimbriata*. Wings narrower and paler: fore wing with the marginal band confined to a narrow apical costal streak, the lower portion from the subcostal vein composed of very small speckled spots: hind wing with a marginal row of minute spots. *Female* with the band broader at the apex, the lower part as in male. Underside with distinct chestnut-brown markings.

Expanse $1\frac{4}{8}$ inch.

Hab. Kangra district. In coll. British Museum.

TERIAS DRONA.

Terias drona, Horsf. Catal. Lep. Mus. E.I. C. (1829), p. 137, pl. f. 13.

TERIAS RUBELLA.

Terias rubella, Wallace, Trans. Ent. Soc. 1867, p. 323.

CATOPSILIA CROCALE.

Papilio crocale, Cram. Pap. Exot. i. pl. 55. f. C, D (1755), ♀.

Papilio alcmeone, Cram. loc. cit. ii. pl. 141. f. E, ♂.

"Kulu. June to August. Both the narrow- and broad-bordered females taken at same time."

CATOPSILIA GNOMA.

Papilio gnoma, Fabr. Syst. Ent. App. p. 828 (1775), ♂.

Papilio philippina, Cram. P. Ex. iv. pl. 361. f. C, D (1781), ♀.

"Kangra valley generally. June to August. Affects flowers, *Zinnia* particularly."

CATOPSILIA PYRANTHE.

Papilio pyranthe, Linn. Syst. Nat. ii. p. 763 (1767).

GONEPTERYX NEPALENSIS.

Gonepteryx nepalensis, Doubleday, Gen. D. L. p. 71 (1847).

Gonepteryx rhamni, Gray, Lep. Ins. Nepal, pl. 5. f. 1 (1866).

IXIAS KAUSALA.

Ixias kausala, Moore, Ann. & Mag. Nat. Hist. 1877, p. 49.

IXIAS PYGMÆA, n. sp. (Plate XII. fig. 1.)

Nearest to *I. kausala*. Smaller, and of a slightly paler yellow : fore wing with a broader black apical band, the red belt being much narrower and more irregularly bordered, leaving a much broader black inner space : hind wing unmarked. Underside similarly marked to *I. kausala*.

Expanse $1\frac{5}{8}$ inch.

Hab. Kangra district. In coll. British Museum.

IXIAS WATTI¹.

Ixias watti, Butler, P. Z. S. 1880, p. 151, pl. 15. f. 1, ♂.

The locality of "Bengal" given for this species is evidently an error.

IXIAS MARIANNE.

Papilio marianne, Cram. Pap. Exot. iii. pl. 217. f. C-E (1782).

CALLOSUNE FARRINA.

Teracolus farrinus, Butler, P. Z. S. 1876, p. 159, pl. 7. f. 2.

CALLOSUNE PURA.

Teracolus purus, Butler, P. Z. S. 1876, p. 160, pl. 7. f. 14, 15.

COLIAS LADAKENSIS.

Colias ladakensis, Felder, Reise Novara, Lep. ii. p. 197, pl. 27. f. 8, 9 (1865).

Colias shipkee, Moore, P. Z. S. 1865, p. 492, pl. 31. f. 13.

"Baralacha Pass."

COLIAS FIELDI.

Colias fieldii, Ménétr. Catal. Mus. Petr. Lep. i. p. 79, pl. 1. f. 5 (1855).

C. edusa, Gray, Lep. Ins. Nepal, pl. 5. f. 2.

COLIAS SAREPTENSIS?

? *Colias sareptensis*, Staudinger, Catal. p. 4 (1871).

Colias (? *sareptensis*). "Occurs all the year round ; found at Dharmsala in grassy fields from April to November, and lower down the valley early in March. The yellow and white forms found at the same time and place, and taken *in copulâ*."

COLIAS PALLIDA?

? *Colias pallida*, Staudinger, Catal. p. 4 (1871).

¹ *Ixias dharmsalæ*, Butler, described as having been collected at Dharmsala by Dr. Watt, is not represented in Mr. Hocking's collection.

COLIAS ERATE ?.

? *Papilio erate*, Esper, Ausl. Schmett. i. 2. pl. 119. f. 3.

Male. Clear yellow: fore wing with the marginal band of a similar form to that in *C. edusa* and *C. fieldi*, unspotted, of a cupreosubbrown colour, and of the same width except at the apex, where it is broader owing to the more pointed form of wing; the band also has the curvature of its inner border as in those species, and its upper end with distinct streaks extending for a short distance along the anterior veins: hind wing with the band and discal spots similar to those in European *C. erate*. Underside paler than in *C. erate*; discal spots less distinct, the discoidal spot on fore wing entirely black, that on hind wing large with whitish centre and lobate red border.

Expanse 2 inches.

This has the apex of the fore wing more prolonged than in European *C. erate*, the angle more acute, and the exterior margin more oblique.

COLIAS LATIVITTA, n. sp.

Male. Yellow: fore wing with a broad unspotted blackish band, the inner border of which is angulated inward at the upper median vein; the band very sparsely yellow-speckled on the anterior veins; discocellular spot large, black: hind wing with a broad blackish crenulated band and a large orange-yellow discocellular spot. Underside olivaceous yellow: fore wing with a black discocellular spot and a distinct discal row of spots: hind wing with a moderate-sized dull pearly-white red-bordered discocellular spot.

Female. Yellow, or white; the band on fore wing broader than in male, and with not very prominent upper and lower yellow spots; the discocellular spot distinct: hind wing darker, with broad marginal band traversed inwardly by large ill-defined yellow spots; discocellular spot brighter red.

Expanse $1\frac{5}{8}$ to $2\frac{2}{8}$ inches.

Hab. Nepal (type); Kunawar; Kangra (*Hocking*). Cashmere (*Hellard*). In coll. F. Moore and British Museum.

The colour in this species is of a deeper yellow, and the bands on both wings are conspicuously broader than in the preceding (*C. pallida*) or S.-Russian specimens of *C. erate*.

HUPHINA PHRYNE.

Papilio phryne, Fabr. Syst. Ent. p. 473 (1775).

Papilio evagete, Cram. Pap. Exot. iii. pl. 221. f. F, G.

BELENOIS MESENTINA.

Papilio mesentina, Cram. Pap. Exot. iii. pl. 270. f. A, B (1782).

SYNCHLOË DAPLIDICE.

Papilio daplidice, Linn. Syst. Nat. i. 2, p. 760 (1767).

SYNCHLOË CALLIDICE.

Papilio callidice, Esper, Schmett. i. 2, pl. 115. f. 2, 3 (1800).

Pieris kalora, Moore, P. Z. S. 1865, p. 489, pl. 31. f. 15.

SYNCHLOË BUTLERI, n. sp. (Plate XI. figs. 6, 6 a.)

Synchloë butleri, Hocking, MS.

Near to *S. callidice*. Upperside—basal area of both wings deeply black-speckled : fore wing with a narrow black discocellular spot, shorter subapical streak, and more distinctly-formed marginal spots : hind wing with an interrupted black discocellular streak, and an exceedingly indistinct blackish-speckled anterior discal fascia. Underside—fore wing with the costal border and apex pale reddish ochreous ; discocellular spot and apical streaks black : hind wing pale reddish ochreous, with black streaks bordering all the veins, the streaks interrupted across the disk.

Expanse $1\frac{5}{8}$ inch.

Hab. Lahoul. In coll. British Museum.

DELIAS EUCHARIS.

Papilio eucharis, Drury, Ill. Exot. Ins. ii. pl. 10. f. 5, 6 (1773); Cram. Pap. Exot. iii. pl. 201. f. B, C, pl. 202. f. C.

DELIAS SANACA.

Pieris sanaca, Moore, Catal. Lep. Mus. E.I.C. i. p. 79 (1857) ; P. Z. S. 1857, p. 103, pl. 44. f. 4.

MANCIPIUM NEPALENSE.

Pieris nepalensis, Gray, Lep. Nepal, pl. 6. f. 3 (1846).

" Larvæ May 5 reared from eggs found on the *Nasturtium*. Imagines came out May 25. Two or three broods in the year. Common."

MANCIPIUM CANIDIA.

Pieris canidia, Sparrm. Amœn. Acad. vii. p. 504 (1768).

Papilio gliciria, Cram. Pap. Exot. ii. pl. 171. f. E, F (1779).

APORIA SORACTA. (Plate XI. fig. 5, larva.)

Aporia soracta, Moore, Catal. Lep. Mus. E.I. C. i. p. 83 (1857).

" Larvæ found on kusmul April 6, went to pupa May 8 ; all victims of Ichneumons. Others also found in the same mouth the following year."

APORIA NABELLICA.

Pieris nabellica, Boisd. Spec. Gén. Lép. i. p. 509 (1836).

METAPORIA PHRYXE.

Pieris phryxe, Boisd. Spec. Gén. Lép. i. p. 446 (1836) ; Jacquem. Voy. Inde, iv. Ins. p. 16, pl. 2. f. 1 (1844), ♀.

METAPORIA CAPHUSA.

Metaporia caphusa, Moore, P. Z. S. 1872, p. 564.

PAPILIONINÆ.

PARNASSIUS HARDWICKI.

Parnassius hardwicki, Gray, Zool. Misc. p. 32 (1831) ; Lep. Ins. Nepal, p. 7, pl. 4. f. 1, 1a; Catal. Lep. Ins. Brit. Mus. p. 76, pl. 12. f. 8.

P. jacquemontii, Kollar, Hügel's Kasch. iv. p. 407, pl. 2. f. 3, 4 (nec Boisd.).

" March. Flies over the snow ; 8000 feet. Sixteen specimens taken in one day, all males but one."

PARNASSIUS JACQUEMONTI.

Parnassius jacquemonti, Boisd. Spec. Gén. Lép. i. p. 400 (1836) ; Blanchard, Jacq. Voy. Inde, iv. Ins. p. 16, pl. 1. f. 3, 4 ; Gray, Catal. Lep. Ins. B. M. pl. 12. f. 1, 2.

" Head of the Kullu valley, and slopes of the Rhotang Pass ; 10,000 up to 13,000 feet."

PARNASSIUS CHARLTONIUS.

Parnassius charltonius, Gray, Catal. Lep. Ins. B. M. p. 77, pl. 12. f. 7, ♂ (1852) ; Moore, Yarkand Mission, Lep. p. 5, pl. 1. f. 3, ♀.

" Baralacha Pass, 18,000 feet, June. Very rare."

PARNASSIUS CHARINO.

Parnassius charino, Gray, Catal. Lep. Ins. B. M. p. 76, pl. 12. f. 12 (1852).

" Top of the Rhotang Pass, 13,000 feet. Very rare."

DALCHINA SARPEDON.

Papilio sarpedon, Linn. Syst. Nat. i. 2, p. 747 ; Esper, Ausl. Schmett. pl. 8. f. 2.

" Flies round and round the tops of trees."

DALCHINA CLOANTHUS.

Papilio cloanthus, Westw. Arcana Ent. i. pl. 11. f. 2 (1841) ; Kollar, Hügel's Kasch. iv. p. 405, pl. 2. f. 1, 2.

ZETIDES AXION.

Papilio axion, Felder, Verh. zool.-bot. Gesch. 1864, pp. 305, 350.

P. eurypilus, Hübn. Samml. ex. Schmett. ii. pl. 107 (nec Linna.).

Near to *Z. telephus*. Underside—fore wing with the discoidal spots larger, the two at the end confluent ; medial transverse band wider posteriorly and less divided by the veins ; the marginal row of spots narrower and more lunular in form, the upper being wider apart : hind wing with a broader medial band, the subbasal costal red-banded streak narrower ; two short black spots divided by a red lunule within the end of the cell, the other red-lunulated spots

similar ; marginal row of spots somewhat larger, less conical, and all entire.

Expanse 3 inches.

Hab. Kangra district. In coll. Rev. J. H. Hocking.

SARBARIA, n. g.

Fore wing comparatively longer and of less breadth than in typical *Achillides* (*A. paris*), the exterior margin being more oblique ; the male¹ with a tomentose (glandular) streak on the submedian and three lower median veins, and another between the submedian and lower median : hind wing of less breadth, and more deeply scalloped.

Type *S. polyctor*.

SARBARIA POLYCTOR.

Papilio polyctor, Boisd. Spec. Gén. Lép. i. p. 205 (1836); Jacq. Voy. Inde, iv. Ins. pl. 1. f. 1, 2; Kollar, Hügel's Kasch. iv. p. 403, pl. 1.

" Taken in June."

SARBARIA PEEROZA, n. sp.

Allied to *polyctor*, Boisd. (Jacq. Voy. pl. 1. f. 1). Differs in being comparatively smaller, with shorter hind wing and smaller tail, the irrorations of a more golden-green colour, and the woolly streaks of the male somewhat shorter. On the hind wing the broad anterior portion of the band is shorter, and of a turquoise-blue (not purple-blue as in *polyctor*) ; the slender hind part of the band is also less distinct in male, and obsolete in female.

Expanse, ♂ 3 $\frac{1}{4}$, ♀ 3 $\frac{3}{4}$ inches.

Hab. Dharmasala (March). In coll. British Museum.

PAPILIO ASIATICA.

Papilio machaon, Gray, Lep. Ins. Nepal, p. 6, pl. 3. f. 1 (nec Linn.).

Pap. machaon, var. *asiatica*, Ménétr. Catal. Mus. Petr., Lep. i. p. 70 (1855).

" Larva on parsnip, July 9th. Perfect insect emerged August 6th. 6200 feet. Also found on the *samp*, a kind of fennel, on March 20th."

ORPHEIDES ERITHONIUS.

Papilio erithonius, Cram. Pap. Exot. iii. pl. 232. f. A, B (1782).

" Larva on orange-tree, Dharmasala, May 23; pnpa, June 3.

BYASA, n. g.

Fore wing lengthened, somewhat narrow, triangular ; costa much arched, apex not pointed ; exterior margin very long and extremely oblique, slightly convex anteriorly ; posterior margin short : hind wing very long hindward, narrow ; costa and abdominal margin very short ; exterior margin deeply scalloped, and with a very broad short

¹ In *Achillides* the males have no tomentose streaks.

spatular tail ; cell long, narrow, pointed at the end. Antennæ short, gradually thickening to the end.

Larva with several short tubercles on each segment. Pupa broad laterally ; head broad and slightly cleft in front ; thorax convex above and beneath, angular at the side ; wing-cases dilated laterally ; dorsal segments with foliaceous lateral appendages.

Type *B. philoxenus*.

BYASA PHILOXENUS. (Plate XII. figs. 5, 5 a, larva.)

Papilio philoxenus, Gray, Zool. Misc. p. 32 (1831) ; Lep. Ins. Nepal, p. 5, pl. 2; Westw. Cab. Orient. Ent. pl. 40. f. 2.

Larva $2\frac{1}{2}$ inches long, pale purple-brown ; head and legs shining black ; head small, corneous, sparsely covered with short hair ; second segment with two short tubercles on each side, and a transverse flattened corneous tentacular sheath above the head ; third, fourth, fifth, and sixth segments each with eight short tubercles (four on each side), the dorsal series longest ; seventh, eighth, ninth, and tenth segments each with six tubercles, and eleventh, twelfth, and thirteenth segments each with four shorter tubercles ; each tubercle red at the apex, and purple black-streaked at the base ; intervening space between the tubercles with a transverse and a dorsal series of paler purple-black spots ; these markings all with pale borders ; seventh and eighth segment each with a lateral, short, broad oblique white band.

Pupa reddish-ochreous, broad laterally ; head broad and slightly cleft in front ; thorax convex above and beneath, angular at the side ; wing-cases dilated laterally ; dorsal segments with foliaceous lateral appendages.

The above descriptions of the larva and pupa are taken from specimens found by Mr. Hocking "feeding on a creeping pitcher-plant (*Nepenthes* ?) on September 20th, at an elevation of 6200 feet. The larvæ changed to pupæ on Sept. 27, the pupa making a squeaking noise when touched."

BYASA RAVANA.

Papilio ravana, Moore, Catal. Lep. Mus. E.I. C. i. p. 96 (1857).
Papilio philoxenus, var., Westw. Cab. Orient. Ent. pl. 40. f. 4.

MENELAIDES ARISTOLOCHIÆ.

Papilio aristolochiae, Fabr. Ent. Syst. p. 443 (1775).

Papilio diphilus, Esper, Ausl. Schmett. pl. 40. f. 1, ♀.

LAERTIAS PAMMON.

Papilio pammon, Linn. Syst. Nat. i. 2, p. 746 (1767), ♂.

Papilio polytes, Linn. ibid., ♀.

" Larva on lemon-tree, June 19th. The perfect insects (male & female of *pammon* form) fly from March to December, at an elevation of 6000 feet. The *polytes* form, ♀, is more restricted to the hot valleys, not appearing before June, and very rarely found above 4000 feet."